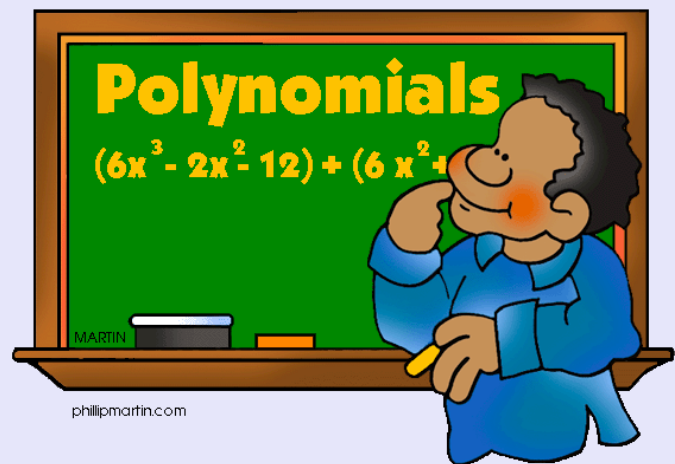


10.1 Adding & Subtracting Polynomials



VOCAB

Standard Form: Terms are placed in descending order

$$5x^5 + 3x^4 - 7x^3 + 9x^2$$

└─→ Leading Coefficient

Degree of Term: Exponent value of variable

Degree of Polynomial: Highest exponent value of the polynomial

Polynomial	Degree of Polynomial	Classify by Degree	Classify by # of terms
5	0	Constant	Monomial
$-17x$	1	Linear	Monomial
$15x + 5$	1	Linear	Binomial
$2x^2 + 4x - 6$	2	Quadratic	Trinomial
$4x^3 + 7x$	3	Cubic	Binomial
$18x^4 - 5x^2 + 7x^2 + 2x - 1$	4	Quartic	Polynomial

Identify the leading coefficient, and classify the polynomial by degree and by the number of terms:

Polynomial	Leading Coefficient	Degree (# class)	Terms
$-8w + 9$	-8	(1) linear	(2) binomial
$5g^2 + 4g - 3$	5	(2) quad.	(3) trinomial
$-9y - 7y^3$	-7	(3) cubic	(2) binomial
$7r^5$	7	(5) quintic	(1) monomial

Add or subtract. Use the vertical or horizontal method.

$$\Rightarrow 1. (-\cancel{8}x^3 + x - 9x^2 + 2) + (\cancel{8}x^3 - 2x + 4)$$
$$-9x^2 - x + 6$$

$$\begin{array}{r} (-\cancel{8}x^3 + -9x^2 + x + 2) \\ + (\cancel{8}x^3 + 0x^2 + 2x + 4) \\ \hline \boxed{-9x^2 - x + 6} \end{array}$$

$$2. (-6x^3 + 5x - 3) - (2x^3 + 4x^2 - 3x + 1)$$

$$\begin{array}{r} (-6x^3 + 0x^2 + 5x - 3) \\ + (-2x^3 + 4x^2 + 3x + -1) \\ \hline -8x^3 + -4x^2 + 8x + -4 \end{array}$$

$$3(6x^2 - x + 3) - (-2 + x^2 - 7)$$

$$\begin{array}{r} (6x^2 - x + 3) \\ + (-x^2 + 0x + 9) \\ \hline 5x^2 - x + 12 \end{array}$$